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ABSTRACT

A comparative analysis is presented of adolescent participation in three-person family problem-solving groups, involving five families with an adolescent diabetic and three families with an adolescent with no diagnosed illness. Observation and interaction analysis of family problem-solving in a laboratory setting were used, as families were asked to discuss written vignettes describing three problem-solving situations. Problem-solving behaviors were then coded into seven summary codes, and the problem-solving process was organized into four phases (introduction, alternative generation, evaluation, and decision). Results indicated that the adolescents in both groups were actively involved in problem-solving, but in different ways. Diabetic families had a more balanced distribution of participation among the mothers, fathers, and teens. No difference was found between the two family groups in terms of total family participation by summary code; the problem-solvers used most of their thought units on identifying the problem and the rest in the following order: evaluating the problem, resolving it, offering alternatives, and least of all, offering decisions. Non-diabetic teens, however, contributed a relatively high percentage of decisions and alternatives and a relatively low percentage of identifications. In an analysis of participation patterns by phases, non-diabetic teens again sent proportionately more decisions than did the other participants. (JDD)

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ADOLESCENT PARTICIPATION IN FAMILY PROBLEM SOLVING: DIABETIC AND NON-DIABETIC ADOLESCENTS COMPARED

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ABSTRACT

What is the adolescent participation pattern in family problem solving? Does the participation pattern differ when the adolescent has diabetes? Interaction analyses of five families with an adolescent diabetic and three families with an adolescent with no diagnosed illness provided the data to answer these questions. All families were rated as "well functioning" families and the adolescent diabetics were rated "well controlled". Results indicated that the adolescents in both groups were actively involved in problem solving but that this was demonstrated in different ways in the two groups. The main difference between the two family groups was that all three family members in the diabetic group sent a balanced percentage of interaction units. This was independent of problem solving phase. In contrast, the total participation of the non-diabetic adolescent was lower than his/her parents and when type of behavior and problem solving phase were considered, this adolescent was most involved in the alternative and decision behaviors and the decision phase. The suggestion is made that participation rates alone without further analyses of participation by type of behavior and problem solving phase may give an incomplete picture of adolescent participation in this important family process.

All families are required to solve a variety of problems each day. Klein and Hill (1979) have defined a family problem as a situation which involves unachieved but potentially achievable goals in which the means for overcoming the barriers to achieving the goal are at least feasible. Family problem solving may be considered a key family activity.

Because the family is a group made up of members of different ages and problem solving competencies, participation rates by members may vary over the life cycle. When children are younger, they may have a limited number of problem solving roles in the family. As they mature, and particularly during adolescence, their potential problem solving skills and the desire for additional input into problem solving about issues which affect them increases. In addition special characteristics, such as the presence or absence of a chronic illness, may also influence participation.

The present paper reports a comparative analysis of adolescent participation in three-person family problem solving groups. It will address family problem solving <u>in</u> families rather than <u>by</u> whole family groups.[1] One group of families included an adolescent with diabetes and the other an adolescent with no chronic illness. The primary research question addressed by this

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[1]Klein & Hill (1979), make this distinction between the study of portions of a family group (<u>in</u> families) versus the entire family group (<u>by</u> families).

paper is: When family functioning level is held constant, how does the participation pattern of adolescents in family problem solving vary based upon the presence or absence of diabetes? Secondly, how does this pattern vary when one considers type of problem solving behavior as well as phase of the problem solving process?

Related Literature

The body of literature which contributes insights about participation of family members in family problem solving is problem solving theory, the study of the family as a problem solving group, research related to family interaction in "normal" and "clinical" families, and survey research on adolescent perceptions of decision making.

Problem Solving Theory and Research

Family problem solving theorists (Tallman, 1970; Klein & Hill, 1979; Aldous, 1971; Cohen, 1974; Straus, 1968; Turner, 1970) posit that active involvement (participation) of all competent family members in family problem solving is important in the achievement of two aspects of problem solving effectiveness: quality solutions and satisfaction with them. Active participation however is not defined. One argument made by these theorists is that personal involvement in the process can increase commitment to the process and outcome. It may also increase the resource base available to the family in the alternative generation stage. It is expected from these theories that high levels of adolescent

participation in family problem solving should contribute to family problem solving effectiveness.

Previous survey data about adolescent participation in problem solving has not revealed such active participation by adolescents. Both the adolescents and their parents perceived adolescent participation as being low (Johannis & Rollins, 1959, 1960; Kieren & Hurlbut, 1985). Such survey data presents one type of information, perceived involvement, usually at a particular point in the process. In fact, these reports only focused upon perceived roles particularly who made the final decision on various issues rather than participation over the entire process. Observational studies of family groups offer a more dynamic picture of various member's participation. Even though theories indicate that adolescents need a high level of participation, it may not be completely equal particiaption among members.

Previous study of the family as a problem solving group has documented the unique features that make it very different than ad hoc problem solving groups (Tallman, 1970; Weick, 1971). Many of these features, such as contrasting developmental abilities of family members and family ground rules about participation in family problem solving might lead one to predict an unequal pattern of participation between parents and adolescents. One feature that might lead to different participation rates for adolescents is whether or not the adolescent has diabetes.

Family Interaction in "Normal" and "Clinical Families"

Considerable work has been done attempting to identify the

differences between family interaction in "normal" and "clinical" family groups. In most of this research, problem solving tasks have been used to generate interaction. Thus, such work has relevance for problem solving research. The results of this work have not provided clear cut distinctions between the groups (Doane, 1978; Jacob, 1975, Riskin & Faunce, 1972).

Participation may be operationalized by several different measures: talking time, number of messages sent, number of messages received to mention a few. As such these are pure process measures, measures of verbal activity that do not directly assess content (Doane, 1978). Pure process measures have not been powerful discriminators between normal and clinical families as the following review notes. Three studies found no differences in talking time between disturbed and normal families (Becker & Iwakami, 1969; Farina & Holzberg, 1968; Ferreira, Winter & Poindexter, 1966). Two other studies (Leighton, Stollak & Ferguson, 1971; Schuham, 1972) however found a pattern. Fathers of normal children spoke more than mothers, who in turn spoke more than children. The number of statements received has also been used to measure dominance in a family (Murrell & Stachiowak, 1967).

From an extensive review of the literature, Doane (1978) concluded that such pure process variables used alone are too limited to provide the explanation for the differences between normal and clinical families. Family structural and content variables were suggested as other avenues to explore. Two of those variables, coalitions and flexibility patterns, are of

particular relevance to this paper. Doane's review noted that cross generational coalitions were more characteristic of disturbed than normal families (Cheek, 1964; Lennard, Beaulieu & Embry, 1965; Mishler, 1975; Schuham, 1970).

With respect to flexibility and the patterns that demonstrate flexible family interaction, Haley (1959) hypothesized that normal families would be more random in interaction with each other whereas disturbed families would be more clique ridden. Subsequent research which attempted to test this hypothesis produced conflicting results. One reason provided by Doane for these results was that flexibility was conceptualized as two discrete categories (random/nonrandom) rather than as placement on a continuum. When the concept was viewed as a continuum, there was strong support for variation on this dimension between normal and clinical families. Twelve studies supported the notion that normal families are more flexible (as measured by such things as evenness of distribution of who follows whom, balanced distribution of who speaks to whom, reduced predictability of speakers in sequence and balanced rates of speech among members). This research would support a prediction that the well functioning families like those studied in the present analysis would have a family participation pattern which demonstrates flexibility as measured by balanced rates of speech between members. No prediction can be made however about how the presence or absence of diabetes on the part of the adolescent member might affect participation patterns.

Adolescent diabetes is a chronic illness with potential family

interaction implications. The management of the disease, as measured by the adolescent's control and adjustment, varies widely. Good control is probably the exception rather than the rule for adolescent diabetics (Orr, Golden, Myers & Marrero, 1983; Tattersall, 1981). This may be associated with the physiological as well as the psychosocial demands of adolescence. What is it then that allows some adolescents to handle this life situation well and others to fail miserably? Since management of adolescent diabetes involves both individual and family problem solving activity (Allen, Tennan, McGrade, Afleck & Ratzan, 1983; Ferrari, Matthews & Barabas, 1983; Galatazer, Amir, Gil, Korp & Laron, 1982; Grwinn, Olex, Witman & Crawford, 1984; Marteau & Greene, 1984; Sargent & Baker, 1983) further study of the family problem solving process may shed light on this important question.

While a hypothesis of equal participation doesn't receive equivocal support from this literature, problem solving theory would lead us to suggest that large discrepancies in participation rates between parents and adolescents would not lead to family problem solving effectiveness as it has been defined. Neither the theory nor the research about the family as a problem solving group has provided information about just how much the adolescent needs to participate in family problem solving or about how the presence of diabetes might influence adolescent participation rates.

METHOD

Sample

The mother, father and oldest adolescent child in eight intact families constituted the sample for the present analysis which was part of a multimethod pilot study (Kieren & Hurlbut, 1985). In all but two of the families the adolescent was the oldest child in the family. In five families, the adolescent had been diagnosed as a diabetic at least one year prior to the study. This group consisted of three female and two male diabetic adolescents ($\underline{x}$ = 16 years). The other three families had no member with a diagnosed chronic health condition. These three families were matched by age and gender of the adolescent with three of the diabetic familes and consisted of one female and two male non-diabetic adolescents ($\underline{x}$ = 15.7 years). Families were identified through medical doctors and local churches and were paid volunteers. All diabetic adolescents were deemed to be in good metabolic control as measured by no more than one episode per week of falling outside the "controlled range" for the technique they used to measure metabolic control. The average SES of both groups of families was level two of five levels on Hollingshead's (n.d.) Four Factor Index of Social Status. This represents medium business, minor professional and technical social strata.

Three questionnaire measures were used to assess family functioning level: Faces II (Olson, Portner & Bell, 1983), a Family Strengths Scale (Olson, Larsen & McCubbin, 1982), and answers to the single question "We are a healthy family".

Responses to all three of these measures placed the eight families in the well functioning range.[2]

Research Instrumentation and Procedures

Problem Solving Situations

The method used to identify problem solving participation was observation and interaction analysis of family problem solving in a laboratory setting. A revealed difference technique modeled after Olson and Ryder's Inventory of Marital Conflicts (1970) was developed to serve as the primary problem solving tasks for the family groups (Kieren, Hurlbut, Lehman, & Gora, 1985). Typical problem solving situations were identified through a review of the general adolescent literature and the literature addressing family issues for teenagers who have diabetes. Nine situations were chosen and problem solving vignettes were written addressing these issues. Separate parallel forms were written for male and female adolescents and for adolescents with and without diabetes. Respondents were asked to independently answer a series of forced

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[2]Mean Family Distance From Center scores (Olson, McCubbin, Barnes, Larsen, Muxen, & Wilson, 1983) for FACES II fell into the mid-range indicating "healthy" levels of family functioning (x = 3.9 for diabetic families and x = 4.1 for non-diabetic). Family member's responses on a 5 point Likert scale to the question "we are a healthy family" averaged 4.5 (5 is strong agreement) for the diabetic group and 4.6 for the non-diabetic group. Mean scores on the Family Strengths Scale were 51.4, 49.0 and 48.2 for the diabetic group fathers, mothers and teens respectively. Comparable scores for the non-diabetic group were 49.3, 52.0 and 48.2. Comparing these scores to national norms; all scores were above the national means.

choice questions about the vignette.[3]

Individual responses to the question, Has a situation like this ever occurred in your family?, provided information about the salience of the situation for the family. A situation was deemed to be salient if two or more family members reported it, or a situation like it, had occurred in their family. Based on this information and individual revealed differences in responses, two salient vignettes were chosen for the family to discuss as family problem solving situations. The task was to arrive at a family consensus on all of the questions posed. In addition, a third common situation involving friends was discussed by all families.

Each family was given up to 10 minutes to discuss each problem solving vignette. All interactions were videotaped in a laboratory setting. Demographic data as well as several measures of family functioning, family strengths, and perceived family problem solving roles and patterns were also collected.

Coding Procedures

The family problem solving interaction was coded from videotapes using a 26 category taxonomy. It was developed by Kieren (1985) and modeled after the code developed for conflict resolution by Raush, Barry, Hertel & Swain (1974). Two coders were involved in an extensive training process. This involved learning the code, identifying coding units, coding from training

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[3]The protocal and measures are available from the authors.

transcripts, learning to use a data logging instrument, coding directly from video. Coder reliabilities were assessed during training in a three stage process. This was required because use of a data logging instrument without transcription or specified time intervals prevented the determination of item-by-item reliability during actual coding since the unit being coded may not be the same for each coder. First, average coder accuracy was assessed at 98%. This refers to how well an individual coder understands and recognizes the coding categories. Secondly, each coder was tested on her ability to recognize appropriate coding units from transcripts. Once this level reached 98%, interrater reliabilities using Cohen's kappa estimate of reliability (1960) were compared between the two raters when they were coding from transcript and video. Interrater reliability estimated over seven summary codes was .75. This compares favorably to the rate (.67) reported by Raush et al. (1974) using a similarly complex behavioral code.

Once adequate levels of coder reliability were reached during training, each coder independently coded a portion of the data. Problem solving vignettes were assigned to each coder randomly to avoid bias. The coding unit was a completed statement or statements with a unitary quality. Each coding unit was assigned a four digit code. This code indicated the sender, then the receiver, and finally the type of problem solving behavior noted in that unit. The present analysis is primarily concerned with the sender and problem solving behavior portion of this code.

Analysis

The data was analysed using procedures from SAS Basics (1982) and involved descriptive statistics of frequencies of thought units summed across the three problem solving situations. Means and standard errors were used for the data measured at the interval and ordinal levels.[4]

Three separate analyses of the data were completed. First, participation patterns by total behavior; second, participation rates compared across problem solving categories; and last, participation rates by phase of the problem solving process. Each of these analyses are concerned with relative participation rates for the fathers, mothers, and teens within a family group. The meaning of specific percentages is explained in the results.

RESULTS

Overall Participation Pattern

The relative frequencies[5] of adolescents and their mothers and fathers within a family group were: diabetic adolescents 33%, diabetic mothers 38%, diabetic fathers 29%, non-diabetic adolescents 22%, non-diabetic mothers 44%, and non-diabetic fathers 35%. Reviewing these percentages, it is evident that the

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[4]The use of parametric scores to summarize ordinal data is supported by the power-efficiency gained and by the statistical robustness of analyses which treat ordinal measures as if the measures are internal (Harris, 1975; Labovitz, 1967, 1970).

[5]For each score, the participant's frequency is divided by the total frequency within a family type.

diabetic families have a more balanced distribution between the mothers, fathers, and teens than do the non-diabetic families. Note that in the diabetic families the parents accounted for around two-thirds of total behavior whereas in the non-diabetic families they accounted for nearly 80%. This may reflect parental dominance or floor holding in the non-diabetic families.[6] In summary, the mothers consistently sent the most units whereas the relative participation rates of the teens depended upon the family type.

Participation Pattern by Problem Solving Behavior

This analysis focused upon whether participation rates differed depending on the type of messages sent. The problem solving behaviors were coded into twenty-six problem solving categories and which were then summarized into seven mutually exclusive problem solving summary codes. These were: fragments, identification of the problem, alternatives, evaluation, resolution mechanisms, decisions, and metaproblem solving. Fragments were units with unclear or incomplete intended meaning; identifications stated the problem, establish goals and such; alternatives suggested how the problem might be solved; resolutions used statements such as cognitive reasons to get the family to agree upon a solution; decisions resulted in a final choice. When family members talked about general problem solving

[6]Floor holders we refer to which two family members account for the largest percentage of total coded family interactions.

and not the problem to be solved, the behavior was coded as metaproblem solving.

Overall, there was no difference between the two family groups in terms of total family participation by summary code.[7] The percentage of units per category for the diabetic and non-diabetic groups, respectively, were as follows: 43% and 42% identifications; 18% and 20% evaluations; 14% and 14% resolutions; 10% and 10% alternatives; 8% and 8% fragments; 6% and 7% decisions; and no metaproblem solving units.

As with the units summed across participants, each of the six participant groups' sending behavior was most represented by identifications, followed by evaluation and then, except for the diabetic teens, resolutions. The order for alternatives, fragments and decisions was not constant across participant groups; however, most of the differences did not represent a large change in the relative frequency of the problem solving summary code. One notable exception to the pattern found for family groups as a whole was for the non-diabetic teens. Compared to the other participant group's sending behavior, the units sent by these teens represented a relatively high percentage of decisions and alternatives and a relatively low percentage of identifications. The non-diabetic teens sent one quarter more decisions and approximately one quarter fewer identifications than any other participant group.

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[7]Participation rates were calculated by dividing the thought units per summary code by the total units separately for each family type.

A similar picture is given when the data is organized in terms of the relative sending behavior for each participant by problem solving summary code within family group. (See table one.)

Table One About Here

Table one indicates that there is a large range of participation rates within the summary codes, however, mothers of both family groups sent a higher percentage of identifications. Again the non-diabetic teens sent a very low percentage of the identifications. The other summary code which offered an interesting pattern was that of decisions. The majority of the decisions were sent by both mothers and the non-diabetic teens. The table, also, reveals no clear floor holding pattern for the diabetic participants but indicates parental floor holding behavior for the non-diabetic families for identifications, evaluations, and resolutions but not for the other categories.

In summarizing the data by problem solving summary code, there is a trend for problem solvers to use most of their thought units on identifying the problem. The problem solvers use the rest of their thought units in the following order: they try to evaluate the problem, resolve it, offer alternatives and, least of all, offer decisions.

This pattern is fairly consistent across all participants except for the non-diabetic teens. These teens send proportionately fewer identifications and many more decisions. These percentages are outliers when one analyzes their behavior

per family or per participant. Otherwise, the majority of the decisions and identifications are made by the mothers. However, if we look closely at the number of mother's decisions compared with her total units the percentage is not very different from the other participants. The mothers apparently accounted for the most decisions and identifications simply because they sent the most thought units overall. It appears that the diabetic group participation is fairly balanced across, as well as within summary code whereas the non-diabetic group participation is not. The non-diabetic parents dominate as floor holders for identifications, evaluations, and resolution whereas the teens and mothers dominate as floor holders for decisions.

Sending Behavior by Problem Solving Phases

In this analyses, the question posed was: does the participation pattern of adolescents and their parents vary depending upon the phase of the problem solving process.[8] Four phases were identified: 1) introduction, 2) alternative generation, 3) evaluation, and 4) decision. (Kieren, Hurlbut, Gora, Lehman, 1985).

The phase analysis revealed a similar pattern to that found in the summary code analysis.[9]

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[8]It should be noted that the data summarized by category and by phase are not independent.

[9]The data was summarized by dividing the six participant groups' phase specific units by their own total units.

The decision phase offered the only unique pattern. As with the other data summaries, the mothers from both groups, diabetic teens and diabetic fathers sent around the same percentage of decisions (around 2.5%). The non-diabetic teens sent double that percentage (5%) and the non-diabetic fathers sent the fewest decisions (1%). Again, the data indicated that the non-diabetic teens sent proportionately more decisions than did any of the other six participants.

Parental floor holding behavior for the non-diabetic families and balanced participation for the diabetic families is again supported when the data is summarized for mothers, fathers and teens relative to one another, by phases and within a family group.[10]

Table two shows that the diabetic mothers usually sent the highest percentage of units and the fathers sent the least, however all three diabetic participants sent relatively the same percentage of units independent of the phase. In contrast, parental floor holding behavior was revealed for the non-diabetic participants during the introduction, alternative and evaluation phase and mother-teen floor holding during the decision phase.

Table 2 about here

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[10]The frequency per participant per phase was divided by the total frequency for that thase within a family type.

Discussion

Family members organize themselves into a system for solving problems. The participation pattern in a family problem solving situation is one reflection of the roles which family members are allowed to assume and how they do so. Paolucci, Hall and Axin (1977) suggest that the freedom to choose, which is associated with family problem solving or decision making, is the central activity of the family organization. The degree of participation in the decision and the process itself has a large influence on the commitment of a family member to initiate action in the first place and to see that the alternative chosen is carried out. Paolucci, Hall and Axin (1977) go even further to suggest that "if the opportunity, responsibility, freedom and burden of making decisions is accepted, the individual can build a strong family foundation for healthy family membership and effective citizenship."

Our understanding of adolescent participation in this important process has been limited. Based upon studies which have looked only at the person who makes the final decisions in family groups, one would conclude that adolescents are perceived as being involved very little. In fact questionnaire data from parents and adolescents in our sample confirmed this perception with respect to the final decisions. None of the families identified the teen as having the primary responsibility for making the final decision. In fact, when asked about many possible problem solving roles the non-diabetic teen is not perceived as having <u>any</u> primary problem solving role (idea, person, evaluator, decison maker etc)

except by the mother in one family. The diabetic teen on the other hand is perceived by parents and self as having many roles (other than decision maker). Theory about family problem solving effectiveness and research contrasting clinical and non-clinical families on the other hand, led us to expect a relatively balanced but not equal participation pattern in these well functioning families.

The data reported for this small sample supports this hypothesis of balanced participation for the diabetic families. Parental dominance is more descriptive of the non-diabetic families. Diabetic teens constituted 33% of the interaction units in three observed family problem solving situations. In these families, the teens are a significant participant in the problem solving process. Compared to the non-diabetic adolescent who contributed 25% of the interaction units in their familiy's problem solving, the diabetic adolescent was more involved. Several speculations may be made about this pattern. One possible explanation is that the presence of diabetes may have created more opportunities for these families to operate as a family problem solving unit. When any member of the family has diabetes the family and family members must solve the problems of adjusting the family operation to the management of this chronic illness. While the person having the disease must be involved in the process and may handle many of the management issues independently, parents of diabetic children are active participants in the process until the child reaches adolescence. Unlike other families where whole family problem solving may occur quite infrequently, diabetic

families have to involve the diabetic child in regular problem solving around such things as recognizing emergency situations, balancing diet, insulin and exercise. Current medical practices recommend whole family involvement in diabetic management rather than assigning the task to the patient or one parent. While involvement may vary from engaging in a study of the nature of the disease to actually being involved in responding to emergencies or administering insulin injections, there is evidence that greater family involvement in management is associated with better levels of diabetic control for adolescents (Sargent & Baker, 1983; Lindsey, 1983; Wishner & O'Brien,1978). A second reason for greater adolescent involvement in family problem solving in these families may be the increased confidence and independence developed in these adolescents when they are involved in problem solving that is important to them and their family. The possibilities of increased self esteem has a generative effect on future involvement (Tallman, 1970). Because these adolescents have also had success in managing their diabetes as measured by their level of control and diabetic adjustment one could argue that this successful achievement of problem solving also contributes to their participation level.

The less balanced participation pattern in the non-diabetic families on first analysis would suggest greater parental dominance or floor holding. The subsequent analyses based upon the type of problem solving behaviors (summary codes) and problem solving phases however may suggest another interpretation. The non-diabetic adolescent's participation pattern in these analyses

is noteworthy. In these families the teens contribute the highest percentage of the alternative and decision behaviors relative to the other family members. The non-diabetic adolescent has a much higher percentage of decision behaviors compared to the diabetic teen. Similarly in the phase analysis the teen and the mother contribute the highest percentage of behaviors at the decision phase, this percentage again is much higher than that of the diabetic teen. This may suggest that while not participating in a balanced manner, the non-diabetic adolescent is involved in important aspects of problem solving. Involvement in the decision making has been used frequently as a measure of family power. Parents in these units may dominate in floor holding or sending more of the total interaction units, but it could be argued that these teens may exert their influence by participation at a key portion of the process.

The literature has argued that active involvement of all competent family members has the potential of increasing the level of family problem solving effectiveness. Active involvement however has not been operationally defined. It would appear from this analysis of two different groups of well functioning families that using relative percentages of family members' total participation may be inadequate to identifying the specific involvement of adolescents in family problem solving. Analyses including type of problem solving behavior and the particular problem solving phase reveals a more comprehensive definition of "active involvement" and fits Doane's (1978) argument that pure process measures used alone have limited utility in distinguishing

between families which function effectively and which do not. A follow-up study is underway designed to test these hypotheses with two groups of families with diabetic adolescents, one group which has demonstrated a higher degree of problem solving effectiveness as measured by diabetic control and the other which has had limited success in solving the problem of diabetic control and management.

REFERENCES

Aldous, J., "A Framework For The Analysis of Family Problem Solving," in J. Aldous, T. Condon, R. Hill, M. Straus, & I. Tallman (eds.), Family problem solving: A symposium on theoretical, methodological, and substantive concerns, Hinsdale IL, Dryden Press, 1971.

Allen, D., Tennan, H., McGrade, B., Afleck, G., & Ratzan, S., "Parent and Child Perceptions of the Management of Juvenile Diabetes," J Ped Psych 8:129-141, 1983.

Becker, J., & Iwakami, E., "Conflict and Dominance Within Families of Disturbed Children," J Abn Psych 74:330-335, 1969.

Cheek, F., "The Schizophrenic," Fam. Proc. 3:155-177, 1964.

Cohen, J., "A Coefficient of Agreement for Nominal Scales," Edu and Psychol Meas 20:37-46, 1960.

Cohen, R. L., "Social Class Differences in the Problem Solving Process: An Integration of Social Organization, Language and Nonverbal Communication," Unpublished doctoral dissertation, University of Minnesota, 1974.

Doane, J. A., Family Interaction and Communication Deviance in Disturbed and Normal Families: A Review of Research, Fam. Proc. 17:357-376, 1978.

Farina, A., & Holzberg, J., "Interaction Patterns of Parents and Hospitalized Sons Diagnosed as Schizophrenic or Non-schizophrenic," J of Abn Psych 73:114-118, 1968.

Ferrari, M., Matthews, W., & Barabas, G., "The Family and the Child With Epilepsy," Fam. Proc. 22:53-59, 1983.

Ferreira, A., Winter, W., & Poindexter, E., "Some Interactional Variables in Normal and Abnormal Families," Fam. Proc. 5:60-75, 1966.

Galatazer, A., Amir, S., Gil, R., Karp, M., Laron, Z., "Crisis Intervention Program in Newly Diagnosed Diabetic Children," Diabet Care 5(4):414-419, 1982.

Grwinn, R., Olex, N., Witman, C., & Crawford, P., "Management Problems in Dealing With an Adolescent Diabetic," J of Fam Pract 18(2):207-222, 1984.

Haley, J., "An Interactional Description of Schizophrenia," Psychiatry 22:321-332, 1959.

Harris, R. J., A Primer of Multivariate Statistics, New York, Academic Press, 1975.

Hollingshead, A. B., Four Factor Index of Social Statics, New Haven, Conn, P. O. Box 1965, Yale Station, n.d.

Jacob, T., "Family Interaction in Disturbed and Normal Families: A Methodological and Substantive Review," Psychol B 82:33-65, 1975.

Johannis, T., & Rollins, J., "Teenager's Perceptions of Family Decision Making," Fam Life Coord 7:70-74, 1959.

Johannis, T., & Rollins, J., "Teenager Perception of Family Decision Making About Social Activities," Fam Life Coord 8:59-60, 1960.

Kieren, D., Problem Solving Behavioral Inventory Code, Edmonton, Department of Family Studies, (Mimeographed) 1985.

Kieren, D., & Hurlbut, N., "Final report: Problem Solving Interaction in Families With and Without a Diabetic Adolescent," Edmonton Department of Family Studies, (Mimeographed), 1985.

Kieren, D., Hurlbut, N., Lehman, D., & Gora, R., Family Revealed Difference Instrument (RDI). Edmonton, Department of Family Studies (Mimeographed), 1985.

Klein, D., & Hill, R., "Determinants of Family Problem Solving Effectiveness," in W. Burr, R. Hill, I. Reiss, & F. I. Nye (eds.), Contemporary Theories About the Family Vol. 1:493-548, New York, Free Press, 1979.

Labovitz, S., "Some Observations on Measurement and Statistics," Social Forces 46(2):151-160, 1967.

Labovitz, S., "The Assignment of Numbers to Order Categories," Am Sociol R 35:515-524, 1970.

Leighton, L., Stollak, G., & Fergusson, L., "Patterns of Communication in Normal and Clinic Families," J of Consult Clin Psychol 36:252-256, 1971.

Lennard, H., Beaulieu, M. & Embry, W., "Interaction in Families With a Schizophrenic Child," Arch Gen Psych 12:166-183, 1971.

Lindsey, N., "Insights Into Interventions for Coping With Diabets," Ambulatory Nursing 48-49, 1983.

Marteau, T., & Greene, S., "The Diagnosis of Diabetes Mellitus in a Child: How Does the Family Fare?," Practition 229:173-179, 1971.

Mishler, E., "The Sequential Patterning of Interaction in Normal and Schizophrenic Families," Fam. Proc. 14:17-50, 1975.

Murrell, S., & Stachiowak, J., "Consistency, Rigidity, and Power in the Interaction Patterns of Clinic and Non-clinic Families," J of Abn Psych 72:265-272, 1967.

Olson, D., Larsen, A., & McCubbin, H., "Family Strengths," in D. Olson, H. McCubbin, H. Barns, A. Larsen, M. Muxen, and M. Wilson (eds.), Family Inventories: Inventories Used in a National Survey of Families Across the Family Life Cycle, St. Paul, MN, University of Minnesota.

Olson, D., McCubbin, H. Barnes, H., Larsen, A., Muxen, M., & Wilson, M., Families: What Makes Them Work. Beverly Hills, CA, Sage, 1983.

Olson, D., Portner, J., & Bell, R., FACES II, in D. Olson, H. McCubbin, H. Barns, A. Larsen, M. Muxen, and M. Wilson (eds.), Families: What Makes Them Work Beverly Hills, CA, Sage, 1983.

Olson, D., & Ryder, R., "Inventory of Marital Conflicts (lmc): An Experimental Interaction on Procedure," J of Marr and the Fam 32:443-448, 1970.

Orr, D. P., Golden, M. P., Myers, G., & Marrero, D. G., "Characteristics of Adolescents with Poorly Controlled Diabetes Referred to a Tertiary Care Center," Diabet Care 6(2):170-175, 1983.

Pond, H., "Parental Attitudes Towards Children With a Chronic Medical Disorder: Special Reference to Diabetes Mellitus," Diabet Care 2:425-431, 1979.

Rausch, H., Barry, W., Hertel, R., & Swain, M., Communication Conflict and Marriage, San Francisco, Jossey-Bass Publishers, 1974.

Riskin, J., & Faunce, E., "An Evaluative Review of Family Interaction Research," Fam. Proc. 11:365-456, 1972.

Sargent, J., & Baker, L., "Behavior and Diabetes Care," Primary Care 10(4):583-594, 1983.

SAS Institute, "SAS User's Guide: Basics (1982 ed)," Cary, NC, Author, 1982.

Shuham, A. "Activity, Talking Time, and Spontaneous Agreement in Disturbed and Normal Family Interaction," J of Abn Psych 79:68-75, 1972.

Shuham, A., "Power Relations in Emotionally Disturbed and Normal Family Triads," J of Abn Psych 75:30-37, 1970.

Straus, M. A., "Communication, Creativity, and Problem Solving Ability of Middle-and Working-Class Families in Three Societies," Amer J Sociol 73:417-430, 1968.

Tallman, I., (1970). "The Family as a Small Problem Solving Group," J of Marr and the Fam 32:94-104, 1970.

Tattersall, R. B., "Psychiatric Aspects of Diabetes - A Physician's View," Br J Psych 139:485-493, 1981.

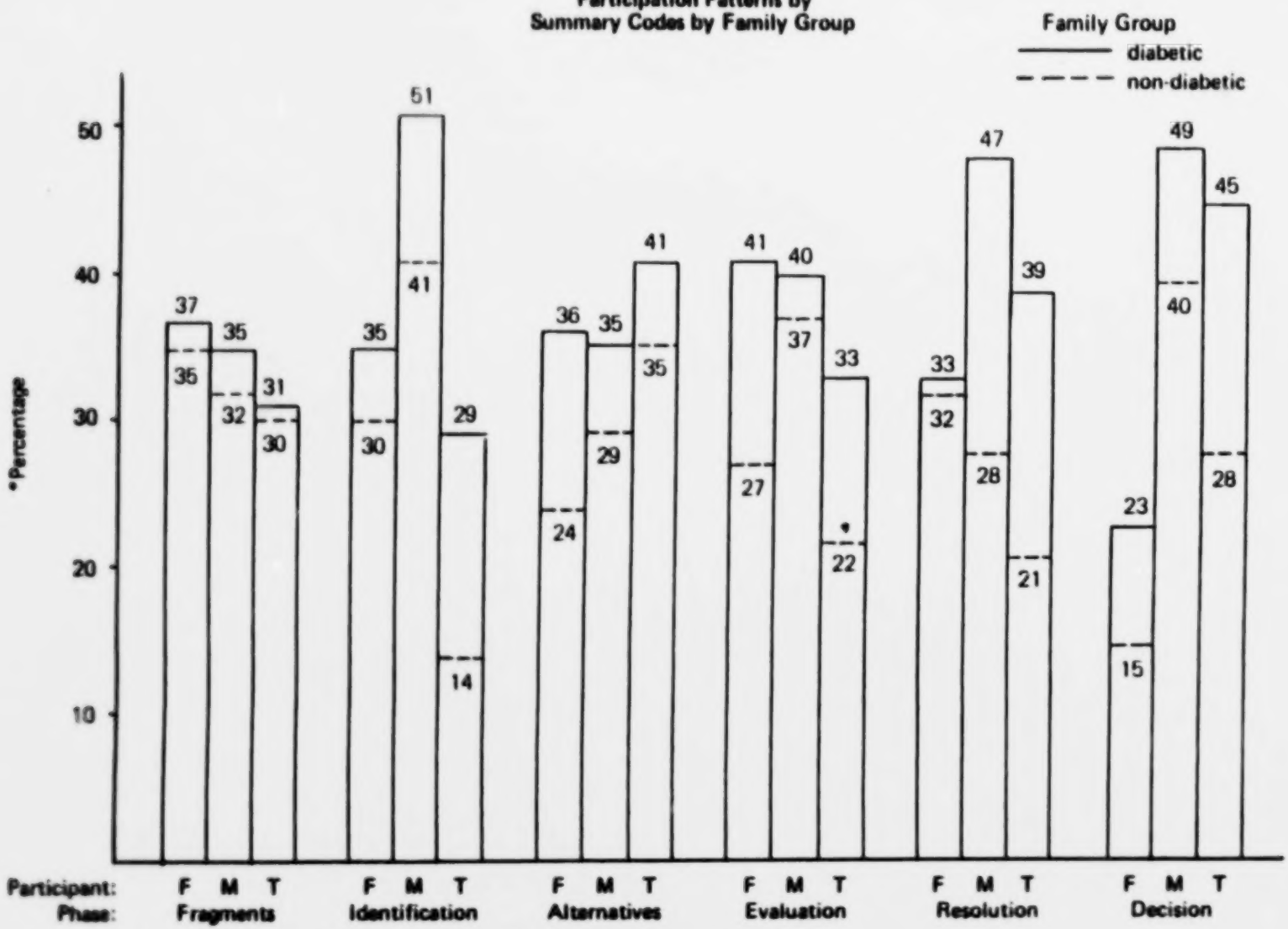
Turner, R. H., Family Interaction, New York, Wiley, 1970.

Weick, K., "Group Processes, Family Processes, and Problem Solving," in J. Aldous, T. Condon, R. Hill, M. Straus, & I. Tallman (eds.), Family Problem Solving, Hinsdale, IL, Dryden Press, 1971.

Wishner, W., & O'Brien, M., "Diabetes and the Family," Med Clin NA, 62:849-856, 1978.

Table One

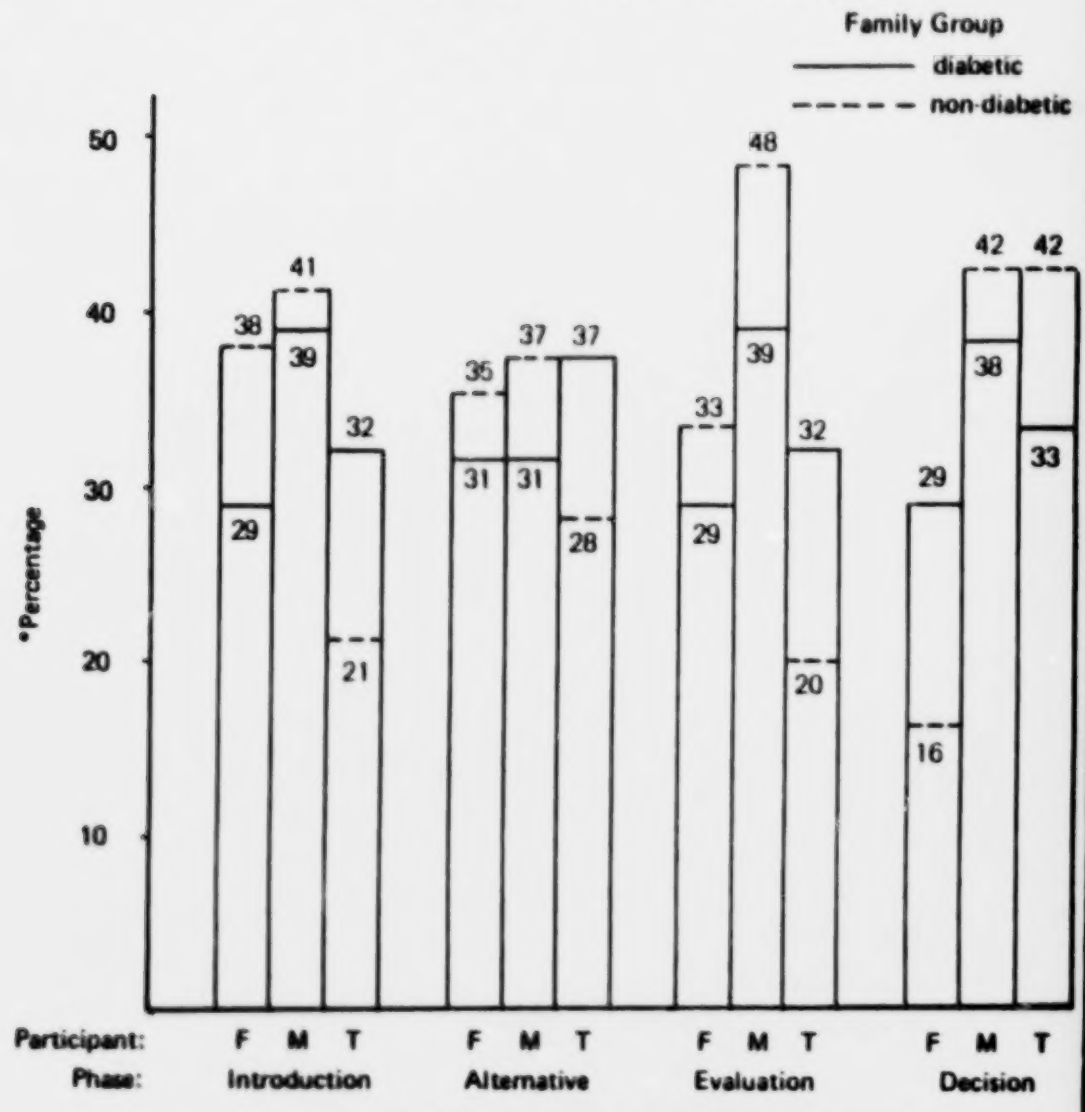
Participation Patterns by Summary Codes by Family Group



* Percentage is the frequency of sending behavior for the participant for a specific summary code divided by the total thought units for that summary code. This is done within a family group only.

Table Two

Participation Patterns by Phase by Family Group



* Percentage is the frequency of units for the participant for a specific phase divided by the total units for that phase. This is done within family group only.